

LAKES

At a Glance

Number of public lakes
.....2,271

Number of lakes
monitored106
impaired by pollution 40

Leading sources of lake
pollution
agriculture 23%
natural19%
coal mining10%

Leading causes of lake
pollution
nutrients60%
organic enrichment.30%
pH.7%

Indicator 2. Water Quality of Lakes

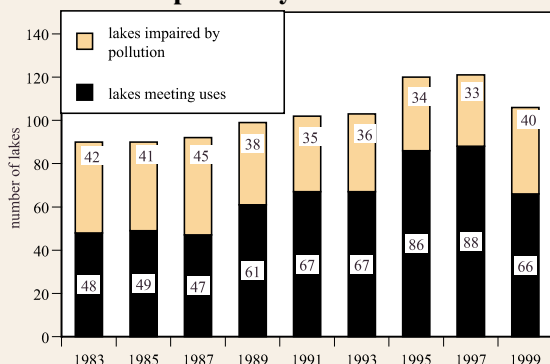
Background Thousands of lakes provide Kentuckians with recreational and economic benefits and supply a number communities with primary and secondary sources of drinking water. The Kentucky Division of Water estimates there are 2,271 lakes in the state, of which 953 are greater than 10 acres in size.

The Kentucky Division of Water monitors most publicly owned lakes every five to seven years. Publicly owned lakes are owned or managed by a city, county, state or federal agency. During 1999, the number of lakes monitored declined by 15 because these domestic water supply lakes were sampled only once in 1997 as part of the state's drinking water program and are not part of the normal lakes monitoring program.

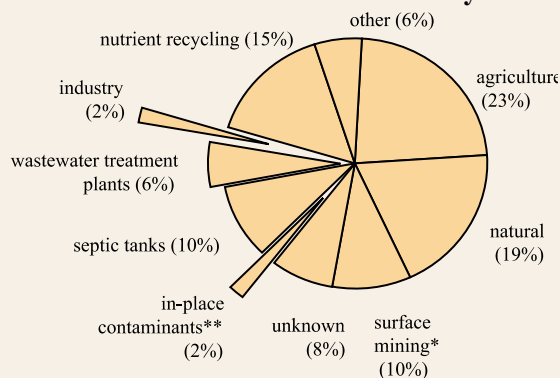
The principal pollutants impairing lake water quality are pesticides and nutrients. Agriculture remains the leading source of lake pollution in Kentucky, polluting 17 of the 40 lakes impaired. Natural conditions, such as shallow lake basins, are impairing the water quality of 10 lakes, followed by nutrient recycling with eight impaired lakes, and coal mining causing five lakes not to meet their designated uses.

Goal Safeguard from pollution the uncontaminated waters of the Commonwealth; prevent the creation of any new pollution of the waters of the Commonwealth; and abate any existing pollution per KRS 224.70-100.

Measure 1. Public Lakes in Kentucky Impaired by Pollution



Measure 2. Sources of Lake Pollution in Kentucky



Progress During the past several years, trends reveal general improvement in the number of monitored public lakes meeting their designated uses for swimming, fishing or as a drinking water source. However, in 1999, Kentucky lost ground. Seven lakes were added to the list of impaired waterways, bringing the total up to 40. One of three public lakes assessed during 1999 was impaired by pollution.

One explanation for the rise in lake pollution may be the drought of 1998 and 1999. The lack of rainfall affected water quality of several lakes resulting in higher water temperature, less aeration, and more extensive phytoplankton communities and blue-green algae. The algae blooms are evident as green coloration of the water and mats of "scum" in mid- to late summer. The eventual die-off of these blooms can also cause low dissolved oxygen levels as bacteria consume oxygen to break down the decaying organic matter. Low dissolved oxygen levels stress fish and other aquatic life and can result in fish kills. Lakes in the Salt and Licking River watersheds were severely impacted by the drought.

But water quality improvements were seen at Reformatory Lake in Oldham County. This lake has been routinely listed as not supporting uses since 1980. The lack of rainfall prevented feedlot nutrients and agriculture runoff pollution from a nearby prison farm from entering the lake, thus improving water quality conditions.

Measures - notes and sources

Measure 1. Source: Ky. Division of Water.

Measure 2. Based on 40 public lakes assessed not fully meeting or only partially meeting tier designated uses due to pollution. Some lakes have multiple sources of pollution which are reflected in this chart. *Active, inactive and abandoned coal mines. **Chemicals (PCBs, metals) of unknown origin found in sediment. Source: Ky. Division of Water.